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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,404	04/13/2004	Mark S. Ramsey	END920030155US1	9431

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EXAMINER

RAMPURIA, SATISH

ART UNIT	PAPER NUMBER
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2191

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/825,404	RAMSEY ET AL.	
	Examiner	Art Unit	
	Satish S. Rampuria	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 April 2004. ✓
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/13/2004</u>  | 6) <input type="checkbox"/> Other: _____                          |

***DETAILED ACTION***

1. This action is in response to the application filed on 04/13/2004.
2. Claims 1-36 are pending.

***Information Disclosure Statement***

3. An initialed and dated copy of Applicant's IDS form 1449 filed on 04/13/2004 is attached to the instant Office action.

***Oath/Declaration***

4. The Office acknowledges receipt of a properly signed oath/declaration filed 04/13/2004.

***Specification***

5. The disclosure is objected to because of the following informalities:
  - On page 8 [0022], "a description 56" should be "a description of data transformation 56".
  - On page 8 [0022], "start date 58" should be "start date valid from 58".
  - On page 8 [0022], "termination date 60" should be "termination date valid until 60".
  - On page 15 [0036], "Fifth step S5 is to write a specification for application for applying the data model operationally" should be "Fifth step S5 is to develop a specification for application for applying the data model operationally".

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- On page 15 [0036], "Sixth step S6 is then to code and deploy the data model using the specification" should be "Sixth step S6 is then to code and deploy the data model operationally using the specification".

Appropriate correction is required.

### ***Drawings***

6. The drawings were received on 04/13/2004. These drawings are acceptable by the examiner.

### ***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 17-22 and 30-36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The result of Claims 17-22 is directed to the act of "set of entry" which does not appear to be a tangible result so as to constitute a practical application of the idea. The act of "set of entry" is merely a thought or an abstract idea and does not appear to produce a tangible result and since the result is not conveyed in the real world. It also does not appear that the usefulness of the set of entry can be realized from the claimed

steps to support a disclosed specific, substantial, and credible utility so as to produce a useful result.

Further, Claims 17-22 are directed to a database table for developing a data model in a data mining system of functional descriptive material per se, and hence non-statutory. The recited components of the claims can reasonably be interpreted as computer program modules/software per se. Also, the specification discloses that many of the features and techniques may be implemented in software (Applicant's specification paragraph [0008]). Therefore, the claims constitute computer programs representing computer listings per se. Such descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs modules/software do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable storage medium encoded with a computer program is a computer element, which defines structural and functional interrelationships between the computer program and the rest of the computer, that permits the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Therefore, the claims do not meet the statutory requirement of 35 U.S.C. § 101, since the claims are not directed to a practical application of the § 101 judicial exception producing a result tied to the physical world.

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Claim 30-36 recite "program product" as claimed element. However, it is noted that the specification describes the program product as to include a transmission media (Applicant's specification page 7, lines 1-3). Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism per se, and as such are nonstatutory natural phenomena. *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 112-14 (1853). Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-7, 9-14, 16-27, 29-31, 33-36 are rejected under 35 U.S.C. 102(b) as being anticipated by US Publication No. 2002/0083067 to Tamayo et al.

(hereinafter, Tamayo).

#### **Per claim 1:**

Tamayo discloses:

1. A method for developing a data model in a data mining system, comprising:

providing a database table of predefined data transformations (paragraph [0014] "a plurality of database tables built from the pre-processed selected data.");

providing raw data (paragraph [0088] "The web data transformation component reads raw log files");

developing a data model of variables using at least one data transformation selected from the database table and the raw data (paragraph [0009] "The model generating step comprises the steps of: selecting an algorithm to be used to generate a model; generating at least one model using the selected algorithm and data included in the integrated database"); and

writing a specification for applying the data model operationally (paragraph [0221] "A mining model object is the result of building a model based on a mining settings specification").

**Per claim 2:**

The rejection of claim 1 is incorporated and further, Tamayo discloses:

2. The method of claim 1, further comprising coding and deploying the data model using the specification (paragraph [0013] "...deploy the at least one model... deployed model comprises program code implementing the model" and paragraph [0221] "A mining model object is the result of building a model based on a mining settings specification").

**Per claim 3:**

The rejection of claim 1 is incorporated and further, Tamayo discloses:

3. The method of claim 1, wherein the developing step comprises:

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determining a set of variables for a desired prediction (paragraph [0114] "A schema 1204 defines the types of models that are to be built in specific situations"), wherein the set of variables include at least one predefined data transformation selected from the database table (paragraph [0014] "a plurality of database tables built from the pre-processed selected data."); and deriving a mathematical relationship between the set of variables (paragraph [0013] "generate at least one model using the selected algorithm and data included in the integrated database").

**Per claim 4:**

The rejection of claim 3 is incorporated and further, Tamayo discloses:

4. The method of claim 3, wherein the developing step further comprises applying the raw data to the set of variables (paragraph [0088] "...mapping and selection component reads corporate database tables... web data transformation component reads raw log files...and converts them into the transaction-based mining schema (TBMS)").

**Per claim 5:**

The rejection of claim 1 is incorporated and further, Tamayo discloses:

5. The method of claim 1, wherein the database table of predefined data transformations associates each of the predefined data transformations with a unique identifier, a description and a validity period (paragraph [0014] "The plurality of data sources comprises: proprietary account or user-based data; complementary external data; web server data; and web transaction data").

**Per claim 6:**



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The rejection of claim 5 is incorporated and further, Tamayo discloses:

6. The method of claim 5, wherein the developing step comprises retrieving the at least one predefined data transformation from the database table according to its unique identifier (paragraph [0009] "The model generating step comprises the steps of: selecting an algorithm to be used to generate a model; generating at least one model using the selected algorithm and data included in the integrated database").

**Per claim 7:**

The rejection of claim 1 is incorporated and further, Tamayo discloses:

7. The method of claim 1, wherein the step of providing raw data comprises extracting raw data from a data warehouse (paragraph [0088] "Data preprocessing engine 903 provides the extraction and transformation components").

**Per claim 9:**

The rejection of claim 1 is incorporated and further, Tamayo discloses:

9. The method of claim 1, further comprising providing a modification policy that governs modification of the predefined data transformations in the database table (paragraph [0110] "the pre-processing is greatly simplified because the system can collect information and update mining tables without almost any processing").

**Per claim 10:**

Tamayo discloses:

10. A computer-implemented method for developing a data model in a data mining system, comprising:

providing a database table of predefined data transformations, wherein each of the predefined data transformations is associated in the database table with a unique identifier and a description (paragraph [0014] "The plurality of data sources comprises: proprietary account or user-based data; complementary external data; web server data; and web transaction data");

extracting raw data from a data warehouse (paragraph [0088] "Data preprocessing engine 903 provides the extraction and transformation components");

determining a set of variables for a desired prediction (paragraph [0114] "A schema 1204 defines the types of models that are to be built in specific situations"), wherein the set of variables comprise at least one predefined data transformation selected from the table (paragraph [0014] "a plurality of database tables built from the pre-processed selected data.");

developing a data model for the desired prediction by applying the raw data to the set of variables and deriving a mathematical relationship between the set of variables (paragraph [0013] "generate at least one model using the selected algorithm and data included in the integrated database"); and

writing a specification for applying the data model operationally.

**Per claim 11:**

The rejection of claim 10 is incorporated and further, Tamayo discloses:

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11. The method of claim 10, further comprising coding and deploying the data model using the specification (paragraph [0013] "...deploy the at least one model...deployed model comprises program code implementing the model" and paragraph [0221] "A mining model object is the result of building a model based on a mining settings specification").

**Per claim 12:**

The rejection of claim 10 is incorporated and further, Tamayo discloses:

12. The method of claim 10, wherein each of the predefined data transformation is further associated with a validity period (paragraph [0014] "The plurality of data sources comprises: proprietary account or user-based data; complementary external data; web server data; and web transaction data").

**Per claim 13:**

The rejection of claim 10 is incorporated and further, Tamayo discloses:

13. The method of claim 10, wherein the determining step comprises retrieving the at least one predefined data transformation from the database table according to its unique identifier (paragraph [0009] "The model generating step comprises the steps of: selecting an algorithm to be used to generate a model; generating at least one model using the selected algorithm and data included in the integrated database").

**Per claim 14:**

The rejection of claim 10 is incorporated and further, Tamayo discloses:

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14. The method of claim 10, wherein the step of writing a specification comprises writing a set of instructions for applying the set of variables of the data model operationally (paragraph [0221] "A mining model object is the result of building a model based on a mining settings specification").

**Per claim 16:**

The rejection of claim 10 is incorporated and further, Tamayo discloses:

16. The method of claim 10, further comprising providing a modification policy that governs modification of the predefined data transformations in the database table (paragraph [0110] "the pre-processing is greatly simplified because the system can collect information and update mining tables without almost any processing").

**Per claim 17:**

Tamayo discloses:

17. A database table for developing a data model in a data mining system comprising a set of entries, wherein each of the set of entries includes a predefined data transformation, a unique identifier for the predefined data transformation (paragraph [0014] "The plurality of data sources comprises: proprietary account or user-based data; complementary external data; web server data; and web transaction data"), a description of the predefined data transformation and a validity period for the predefined data transformation (paragraph [0014] "The plurality of data sources comprises: proprietary account or user-based data; complementary external data; web server data; and web transaction data").

**Per claim 18:**

The rejection of claim 17 is incorporated and further, Tamayo discloses:

18. The database table of claim 17, wherein the predefined data transformation comprises a mathematical expression for determining a result (paragraph [0013] "generate at least one model using the selected algorithm and data included in the integrated database").

**Per claim 19:**

The rejection of claim 17 is incorporated and further, Tamayo discloses:

19. The database table of claim 17, wherein the predefined data transformation comprises a SQL expression (paragraph [0045] "DBMS engine 310 receives queries in the form of structured query language (SQL) statements").

**Per claim 20:**

The rejection of claim 17 is incorporated and further, Tamayo discloses:

20. The database table of claim 17, wherein the validity period comprises a start date and a termination date for the predefined data transformation (paragraph [0014] "The plurality of data sources comprises: proprietary account or user-based data; complementary external data; web server data; and web transaction data").

**Per claim 21:**

The rejection of claim 17 is incorporated and further, Tamayo discloses:

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21. The database table of claim 17, wherein the description comprises meta data (paragraph [0114] "A schema 1204 defines the types of models that are to be built in specific situations").

**Per claim 22:**

The rejection of claim 17 is incorporated and further, Tamayo discloses:

22. The database table of claim 17, wherein the database table is associated with a modification policy that governs modification of the predefined data transformation (paragraph [0110] "the pre-processing is greatly simplified because the system can collect information and update mining tables without almost any processing").

**Per claim 23:**

Tamayo discloses:

23. A computerized system for developing a data model in a data mining system, comprising:

a database table of predefined data transformations (paragraph [0014] "a plurality of database tables built from the pre-processed selected data.");

a data import system for extracting raw data from a data warehouse (paragraph [0088] "Data preprocessing engine 903 provides the extraction and transformation components");

a variable determination system for determining a set of variables for a desired prediction (paragraph [0114] "A schema 1204 defines the types of models that are to be built in specific situations") , wherein the set of variables comprises at least one predefined data

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transformation selected from the database table (paragraph [0014] "a plurality of database tables built from the pre-processed selected data.");

a model development system for developing a data model for the desired prediction using the determined variables (paragraph [0013] "generate at least one model using the selected algorithm and data included in the integrated database"); and

a specification development system for developing a specification for applying the data model operationally (paragraph [0221] "A mining model object is the result of building a model based on a mining settings specification").

**Per claim 24:**

The rejection of claim 23 is incorporated and further, Tamayo discloses:

24. The system of claim 23, further comprising an output system for outputting the data model for coding and deployment based on the specification (paragraph [0013] "...deploy the at least one model... deployed model comprises program code implementing the model" and paragraph [0221] "A mining model object is the result of building a model based on a mining settings specification").

**Per claim 25:**

The rejection of claim 23 is incorporated and further, Tamayo discloses:

25. The system of claim 23, wherein the model development system applies the raw data to the set of variables and derives a mathematical relationship between the set of variables (paragraph [0013] "generate at least one model using the selected algorithm and data

included in the integrated database”).

**Per claim 26:**

The rejection of claim 23 is incorporated and further, Tamayo discloses:

26. The system of claim 23, wherein the database table of predefined data transformations associates each of the predefined data transformations with a unique identifier, a description and a validity period (paragraph [0014] “The plurality of data sources comprises: proprietary account or user-based data; complementary external data; web server data; and web transaction data”).

**Per claim 27:**

The rejection of claim 26 is incorporated and further, Tamayo discloses:

27. The system of claim 26, wherein the variable determination system retrieves the at least one predefined data transformation from the database table according to its unique identifier (paragraph [0009] “The model generating step comprises the steps of: selecting an algorithm to be used to generate a model; generating at least one model using the selected algorithm and data included in the integrated database”).

**Per claim 29:**

The rejection of claim 23 is incorporated and further, Tamayo discloses:

29. The system of claim 23, further comprising a modification policy that governs modification of the predefined data transformations in the database table (paragraph



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[0110] "the pre-processing is greatly simplified because the system can collect information and update mining tables without almost any processing").

**Claim 30-31 and 33-36** is the program product claim corresponding to method claims 23-24 and 26-29, and rejected under the same rationale set forth in connection with the rejection of claims 23-24 and 26-29, above.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 8, 15, 28, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamayo in view of US Publication No. 2003/0101442 to Wu (hereinafter, Wu).

**Per claims 8 and 15:**

Tamayo does not explicitly disclose wherein the step of writing a specification comprises writing a reusable set of instructions for applying the data model operationally

However, Wu discloses in an analogous computer system wherein the step of writing a specification comprises writing a reusable set of instructions for applying the

data model operationally ('1442 paragraph [0016] "regions of reusable instructions need to be formulated....information about the reusability of individual instructions...reuse region should contain reusable instructions...").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of wherein the step of writing a specification comprises writing a reusable set of instructions for applying the data model operationally as taught by Wu into the method of generating data mining models as taught by Tamayo. The modification would be obvious because of one of ordinary skill in the art would be motivated to have reusable set of instructions to optimize the performance of the program (paragraph [0005]-[0007]).

**Claim 28** is the system claim corresponding to method claim 8, and rejected under the same rational set forth in connection with the rejection of claim 8, above.

**Claim 32** is the program product claim corresponding to method claim 8, and rejected under the same rational set forth in connection with the rejection of claim 8, above.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Satish S. Rampuria** whose telephone number is **(571) 272-3732**. The examiner can normally be reached on **8:30 am to 5:00 pm**

Monday to Friday except every other Friday and Wednesday and federal holidays.  
Any inquiry of a general nature or relating to the status of this application should be directed to the **TC 2100 Group receptionist: 571-272-2100**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Wei Y. Zhen** can be reached on **(571) 272-3708**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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